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Review of D.I.Blokhintsev's Book: "Fundamentals
of Quantum Mechanics" 1949, 588 pp

Second revised edition.

Reviewed by L. I. Storchak

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Blokhintsev's book seems to be strongly influenced by requirements of the Ts.K. (Central Committee), particularly by discussions initiated by A.A. Zhdanov in 1947. The influence of the party line is clearly seen in the difference between the first and the second edition. (The first edition appeared in 1944). At the present time, according to Ts.K., scientific theories have to be materialistic, they should not follow the idealistic scientific distortions, accepted by bourgeois scientists like Bohr, Heisenberg and Schroedinger. Blokhintsev also was guided by the criticism of M.A. Markov, expressed in the latter's article: "On Nature of Physical Knowledge" (cf. not given) in which the idealistic nucleus of the "principle of complementarity" by Bohr, Heisenberg and others was revealed and sharply blamed. Blokhintsev's particles are atomic and materialistic. Mass, Charge etc. of the same type of particles do not vary; the only admissible transformations are one type of particles into another (p.19). The atomism of particles has well defined properties: mass, charge etc. are identical for the same type of particles; the particles act as an entity and their properties are invariable; they may undergo mutual transformations. At the same time the particles display wave properties: diffusion. Therefore continuity and discontinuity are part of the nature of elementary particles and form the basis of quantum mechanics. This ~~is~~ proves the incoherence of Schroedinger's "wave packet" and other bourgeois hypotheses (p.43).

Blokhintsev attempts to find the real meaning of Planck's constant, as a boundary between macro- and micro-physics. Phenomena connected with h are called quanta. The existence of a quantum action leads to

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phenomena of diffraction of particles (p.74).

Thereupon, according to Storchak, the reviewer, the main problem in philosophy of nature is the confirmation of materialism, so well achieved in this book, and the abolishment of bourgeois idealism.

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